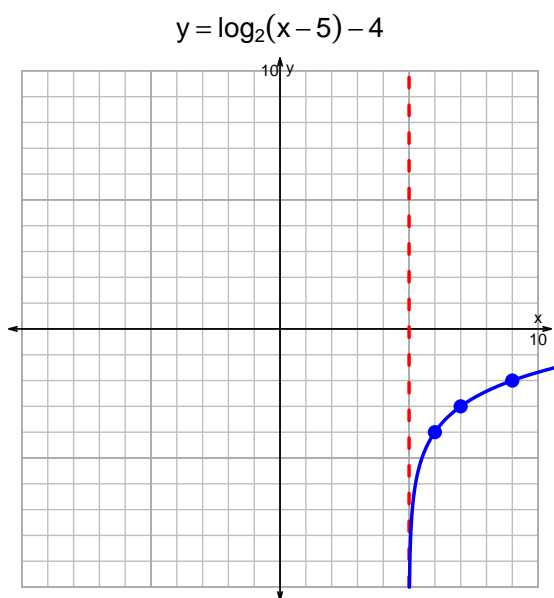
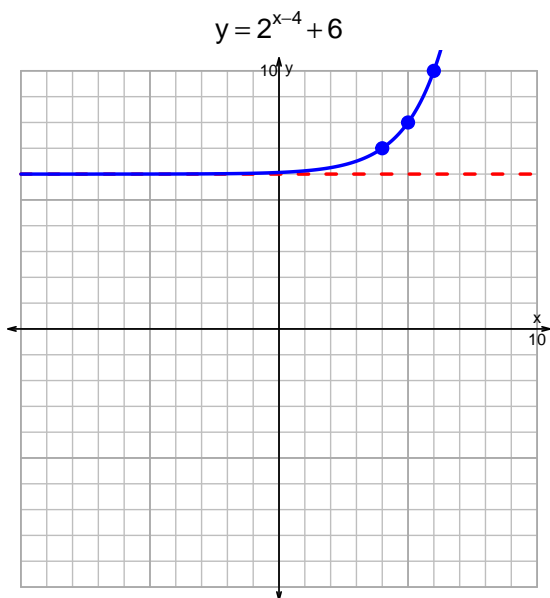


Name: \_\_\_\_\_

Date: \_\_\_\_\_

s18QUIZ: EXP LOG (SLTN v281)

1. Graph  $y = 2^{x-4} + 6$  and  $y = \log_2(x - 5) - 4$  on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-17 = \left(\frac{-3}{5}\right) \cdot 2^{7t/4}$$

Divide both sides by  $\frac{-3}{5}$ .

$$\frac{17 \cdot 5}{3} = 2^{7t/4}$$

Take log, base 2, of both sides.

$$\log_2\left(\frac{17 \cdot 5}{3}\right) = \frac{7t}{4}$$

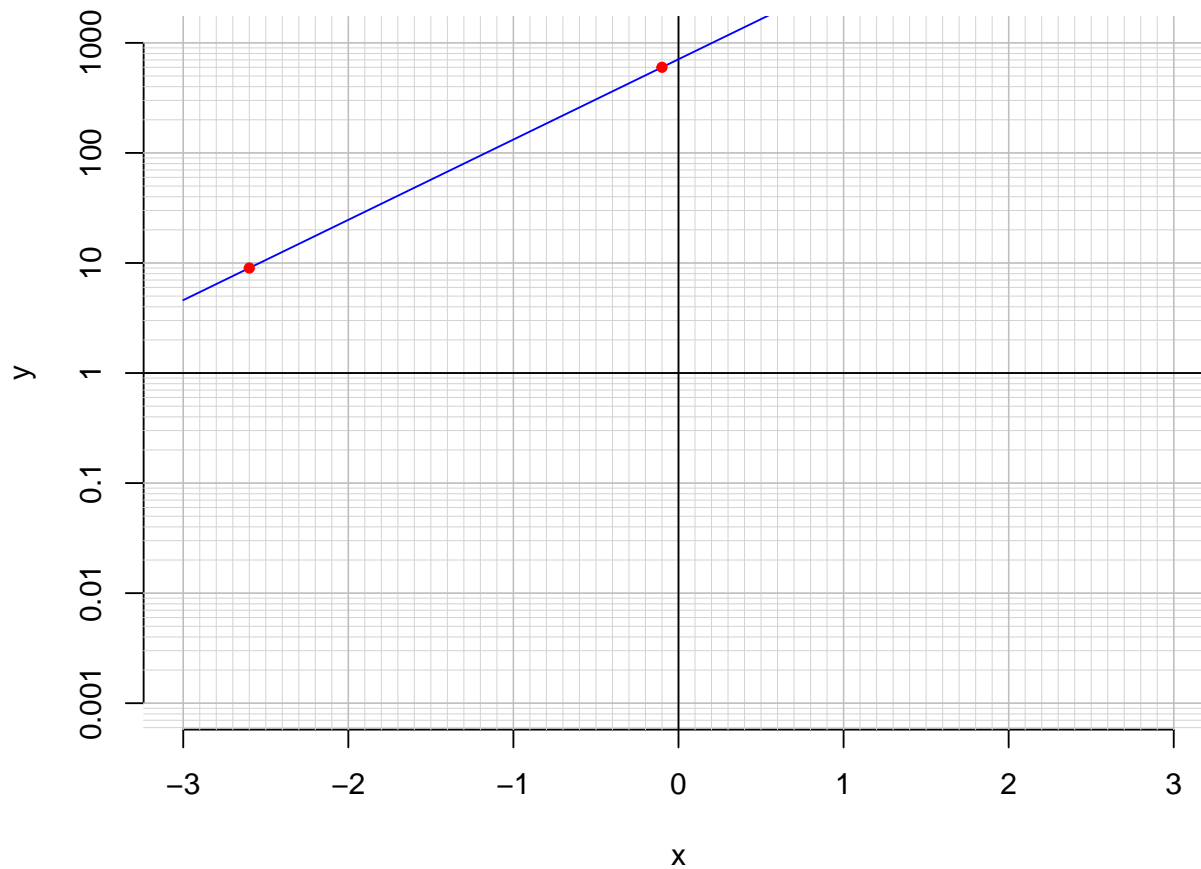
Divide both sides by  $\frac{7}{4}$ .

$$\frac{4}{7} \cdot \log_2\left(\frac{17 \cdot 5}{3}\right) = t$$

Switch sides.

$$t = \frac{4}{7} \cdot \log_2\left(\frac{17 \cdot 5}{3}\right)$$

3. An exponential function  $f(x) = 710 \cdot e^{1.68x}$  is graphed below on a semi-log plot.



- a. Using the plot above, evaluate  $f(-2.6)$ .

$$f(-2.6) = 9$$

- b. Express  $f^{-1}(x)$ , the inverse of  $f$ .

$$f^{-1}(x) = \frac{1}{1.68} \cdot \ln\left(\frac{x}{710}\right)$$

- c. Using the plot above, evaluate  $f^{-1}(600)$ .

$$f^{-1}(600) = -0.1$$